

39- Title: Resilience of key biological parameters of the Senegalese flat sardine in the context of overfishing and climate change

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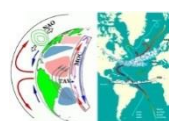
Abstract: The Senegalese flat sardine, *Sardinella maderensis* is a highly exploited fish in Senegal, West Africa; thus, its growth and reproduction parameters are used as key biological parameters to improve fisheries management. Here, we studied these parameters using landing data from the Senegalese small-scale fisheries and a review of the published literature dating back over more than 20 years. Age was estimated from length frequency analysis, from which growth parameters were calculated and the growth performance index was assessed. In the context of global climate change such as the increase of the average sea surface temperature along the Senegalese coast, we found that the length-weight parameters, sex ratio, size at first sexual maturity, period of reproduction, and condition factor of *S. maderensis* have not changed significantly in Senegal. The biological parameters of *S. maderensis* remained highly consistent, despite high exploitation and the fluctuations in environmental conditions that affect the early phases of the small pelagic fish in West Africa. This lack of plasticity by this species should be incorporated into fisheries management plans.

40- Title: Senegalese *Sardinella aurita* from 1995 to 2011: Review of size spectra, sex ratio, gonadal somatic and condition indexes from small scale main national landing sites

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Abstract: *Sardinella aurita* is the main abundant fish species in Senegal and of major socio economics interest in West Africa. This species follow the r selection theory i.e. low cost for reproduction, short lived fish, large number of offspring at a time, low offspring survival and no parental care; thus they are sensitive to climate fluctuation which impact their pelagic habitat. A monthly data base started from 1995 to 2011 have been compiled by the CRODT mixing landing site sampling with some data collected in situ using fisheries research vessel. The relationship between LT and LF is linear and appear as consistent, which allow future integration of other basis using different metric for fish individual size. From this basis, we analyse the change in individual fish size spectra, their sex ratio, maturity stage and gonadal somatic index as well as the condition factor. The change, are scrutinized per size class and geographical location associated to different pelagic habitat in Senegal.

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